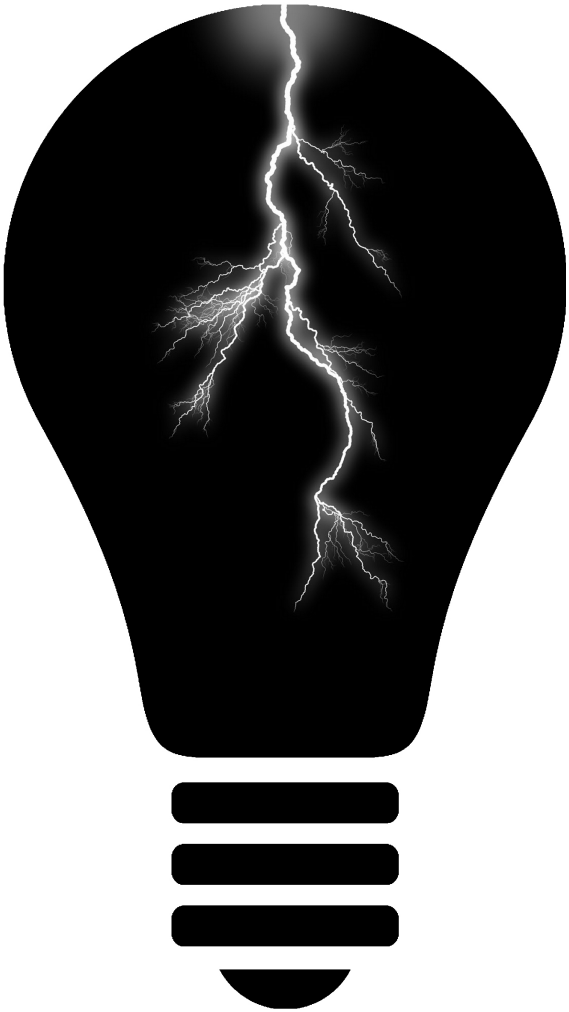
Hypaspark

Version 2.0



USER MANUAL

Warnings

Unit contains high power magnets which may cause damage to electronic data storage systems and also may be a pinch hazard.

Unit will get warm with use, this is normal. At high current the back heat-sink plate may become a burn hazard.

ONLY use the unit in the wall mount position above 50Watts power usage. So that it can dissipate heat properly.

DO NOT touch LED Bunk lights during use as they become hot.

DO NOT defeat the circuit protection as this may result in fire or extra damage to the unit.

DO NOT USE this unit in an oxygen environment greater then 23.5%.

DO NOT connect this unit to a power source that is out of its range. Unit is designed to operate on power sources between 9 – 32VDC and 8 – 24VAC. With the “Power Active” switch off the “Power Meter” can safely be connected up to 50VDC and 35VAC for a short period.

USE ONLY approved accessories on the Gooseneck / Permanent Power connectors. Just because another Gooseneck may look the same doesn't mean it is. Use of an unapproved accessory may result in the units failure.

DO NOT leave devices on charge while unattended

DO NOT leave devices powered on in an environment that will result in overheating, such as on bedding or in bags as these will impede airflow.

Overview

The Hypaspark is a personal power and lighting unit for saturation divers. It has a wide power input range, making it ideal for many different power systems both AC and DC based. It can also be used on battery power. It has multiple USB ports for charging a variety of devices, as well as an automotive accessories socket for devices requiring extra power. The lighting system consists of a red “night light” and 3 separate ultra bright white lights, as well as a gooseneck light.

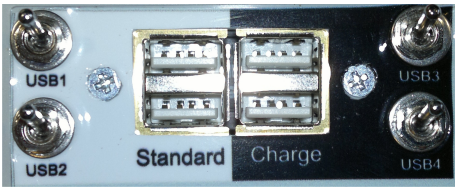
Connections

Power

Power connection is via the supplied 1m 5 pin DIN to alligator clip lead. Connection is not polarity conscious. The alligator clips are intentionally staggered to prevent them from shorting together. Unit will operate from 9V – 32VDC and 8V to 24VAC. It is circuit protected at 10 Amps.

USB

Unit has 4 USB ports 2 are for charging “smart” devices such as Mp3 players, phones and tablets, while 2 are for “dumb” devices such as fans, lights and novelties. It is circuit protected to 3 Amps.



Automotive Accessories Socket (lighter socket)

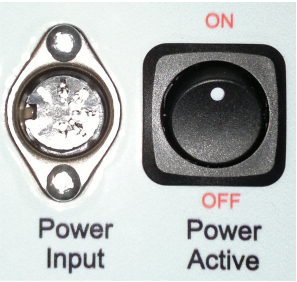
This allows almost any device that a car power adapter can be purchased for to be powered. The accessories socket outputs regulated 12VDC and is circuit protected to 8 Amps.

Permanent Power / Gooseneck Light Socket

There are 2 Permanent Power / Gooseneck sockets which are switched together. As well as provide permanent power for special accessories.

Powering Up

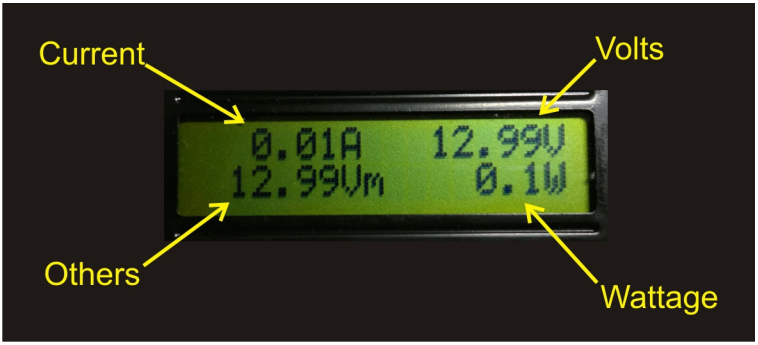
1. MAKE SURE the “Power Active” switch is OFF and all breakers are switched on.
2. Connect the supplied power lead to the power input socket then to your power source.



3. The “Power Meter” will display the voltage of your source. If it is above 36V DO NOT use as this is its absolute limit. 12V sub system may go into protect mode above 32V.
4. Once a safe voltage is present, the “Power Active” switch can be switched on.
5. The “Night Light” switch will illuminate.
6. You are now ready to use the Hypaspark

Reading the Power Meter

The “Power Meter” displays information about power quality and usage. It displays 4 different measurements at once. It permanently displays Volts (V), Current or Ampere(A) and Wattage (W). It also cycles between Peak Current (Ap), Minimum Voltage (Vm), Peak Wattage (Wp), Amp Hours (Ah).



Volts: Volts is the electrical equivalent of pressure. Too little and it won't work correctly, too much and it will damage equipment.

Current: Current is the electrical equivalent of flow. If you use to much you will blow a fuse.

Wattage: Wattage is a product of both current and volts. This is most useful as it helps not tripping the external fuse on the saturation chamber. For example if the bunk light globe is rated at 50Watts then this is a good indication of how much power you can draw from the light socket. The potential to draw more is there but you will risk tripping the external fuse.

Peak Current:	The most amount of current that has been used at any given time since the unit was powered up.
Min Voltage:	The least amount of voltage that has been present since the unit was powered up.
Peak Watts:	The most power that has been used at any given time since the unit was powered up.
Amp Hours:	The amount of current the unit has used since it was powered up.

The last 4 readouts will be of little to no use for most users.

Lights

The Hypaspark has 3 high power white LED bunk lights and 1 low power red LED for the “Night Light”. It also comes with a gooseneck lamp that can be connected to either side of the Hypaspark.

Bunk Lights

The Bunk Lights point forward, left and right. Each light has an individual switch.

Night Light

The “Night Light” is red and points downwards. Its purpose is to provide light when not wanting to disturb the entire chamber. It is switched by the small red illuminated switch. The switch is permanently illuminated when the hypaspark is powered up. This allows the user to find the switch in the dark.

Gooseneck Lamp

The Gooseneck Lamp is provided to allow users to have a directional light. Most would bend it around so as the light is coming from behind their heads when in the bunk.

The Hypaspark has been designed to work on either side of a saturation chamber. As a result the left and right side of the unit are identical so you can always have the goose-neck lamp wrap around behind your head and a light shielded from your eyes.

DO NOT use any other Gooseneck lamp other than the one provided, as the internal connections have been modified to suit the Hypaspark.

USB Power

4 USB power outlets are provided. 2 for charging/powering high power devices such as smart phones and tablets. 2 for standard devices such as fans, lights etc. Standard devices can be plugged into the charge ports as well.

Each USB port is switched by the adjacent switch, so there is no need to remove the plug when the device no longer needs power.

The dull orange glow may be noticeable from behind the USB ports this is completely normal and also indicates that the USB supply is functioning.

The USB ports are circuit protected to 3 Amps total.

The top of the Hypaspark has been left bare to give a convenient shelf to place a phone on while charging.

Car 12V Socket

The car lighter socket can provide up to 96 watts of power to power anything that a car adapter can be purchased for.

It supplies a regulated 12V, so anything that requires 12V can be powered with a simple cable. Some netbooks and portable DVD players require a regulated supply. An unregulated supply such as a car, can vary from 10.5V up to 15V which would result in the failure of the connected device, unless a more complex adapter is used.

For devices that require something other then 12V, such as laptops, the correct car lighter power adapter must be used.

Some devices (especially laptops) will have power adapters that are rated at 90Watts and higher. This is their absolute maximum power requirements, 99% of the time they will draw much less than this.

It can be switched by the 12V Breaker switch.

The socket in the Hypaspark also has a locking function as shown on the bezel, as well as a dust/moisture cover.

Circuit Breakers

The Hypaspark has 3 circuit breaker switches. These can be switched manually or when the current through a breaker exceeds the limit it will simply switch off. It also has an internal self-resetting breaker. Circuit breakers do no act instantly, the time it takes to trip depends on how much the limit is being exceeded by.

Trip Times

At 100% of the breakers rating the breaker will never trip.

At 135% of the breakers rating the breaker will trip within 1 hour.

At 200% of the breakers rating the breaker will trip within 1 minute.

Circuit breakers are a last resort protection. They usually do not make a device indestructible, they do stop it from catching fire once a terminal fault has occurred. Circuit breakers CAN NOT be reset instantly, you must wait at least 30 seconds before they can be reset after they trip. The internal breaker requires about 1 minute before it will reset.

Main Breaker

The Main Breaker is for the entire unit. If it is off not even the power meter will operate. It is rated at 10 Amps

USB Breaker

The USB Breaker is for the USB ports and the “Night Light”. It is rated at 3 Amps

12V Breaker

The 12V Breaker is for the 12V lighter socket. It is rated at 8 Amps

Internal Breaker

The Internal Breaker is for the bunk lights, gooseneck light and permanent accessories power. It is rated at 2.5 Amps

Specifications

Power Input:	9VDC to 32VDC , 8VAC to 24VAC
Power Output:	Regulated 12VDC @ 8 Amps continuous (96Watts)
	Regulated 5VDC @ 3 Amps continuous (15Watts)
Power Usage:	120Watts continuous max
Bunk Lights:	12V @ 220mA (2.64Watts) max each
Night Light:	5V @ 80mA (0.4Watts) max
Gooseneck Lamp:	12V @ 30mA (.36Watts) max
Magnet Holding Power:	20Kg MAX @ right angle to mounting face
Weight	950grams (unit only no accessories)
Dimensions	190mm wide x 120mm deep x 100mm high (no accessories)

Troubleshooting

If you still are unable to fix a fault after reading this, please contact me.

Power Meter will not start.

Cause	Remedy
Voltage to low (<5V)	Find higher voltage source
Main breaker is switched off	Switch on Main breaker
Unit has been overloaded	Remove cause of overload and reset main breaker

Night light and USB ports don't work but Power Meter is working

Cause	Remedy
Voltage to low (<9V)	Find higher voltage source
USB breaker is switched off	Switch on USB breaker
USB supply has been shorted out or overloaded	Remove short and switch “Power Active” switch off, wait 10 seconds then switch back on. Also check USB Breaker.

12V Accessories socket doesn't work but Power Meter is working

Cause	Remedy
Voltage to low (<6V)	Find higher voltage source
12V breaker is switched off	Switch on 12V breaker
12V supply has been shorted out or overloaded	Remove short and switch “Power Active” switch off, wait 10 seconds then switch back on. Also check 12V breaker.

12V Accessories socket, Bunk lamps, Gooseneck and Permanent Power sockets doesn't work but Power Meter is working

Cause	Remedy
12V supply has been shorted out or overloaded	Remove short and switch “Power Active” switch off, wait 10 seconds then switch back on. Also check 12V breaker.

Bunk lamps, Gooseneck and Permanent Power sockets don't work but Power Meter and 12V accessories port is working

Cause	Remedy
Internal self-resetting fuse has tripped.	Remove anything plugged into gooseneck sockets and switch off all bunk lights and wait 1 minute before trying again.

Device won't charge from USB port.

Cause	Remedy
Not plugged into “Charge” socket	Change to “Charge” socket

Contact / Service

If you believe your device requires service or spare parts please contact.

Email:- hypaspark@gmail.com

Disclaimer

The Hypaspark unit and its accessories have not been independently tested, nor has it been verified for use in Saturation Chambers. In using the Hypaspark unit and its accessories you do so at your own risk.

Subject to rights under local law(s) that cannot be excluded, Hypaspark shall not under any circumstances be liable, either expressly or implicitly, for any damages or losses of any kind whatsoever resulting from use of your unit or accessories.

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